S/N 10/796,831

SUMM When producing medium density polyethylene, the combination of a tubular with an autoclave reactors offers a broader operating window than the tubular reactor only; the produced polymers can vary from film grade with a very narrow MWD to coating type resins having a much broader MWD, by enhancing the production in the tube or in the autoclave where either a minor or a large degree of back mixing is needed. By polymerizing ethylene and optionally comonomers in an autoclave reactor, one will get a polymer product having a broad molecular weight distribution, while the polymerization in a tubular reactor will give a polymer product having a narrow molecular weight distribution; by using combinations of a tubular and autoclave reactors in series, one can, dependent on the reaction conditions and percentages of monomer polymerized in the reactors design polymer products having all kinds of intermediate molecular weight distributions. In this way the molecular weight distribution of polyethylene homo or copolymers can be manipulated with more flexibility than in a conventional autoclave reactor or in a conventional tubular reactor, while maintaining a high polymer density.

SUMM In a preferred embodiment, the process of the present invention is a high pressure process for the production of medium density polyethylene resins for extrusion coating or cast film applications.

DETD In this continuous process, polyethylene for blown film applications was obtained with an ethylene conversion rate of 21 percent. The polymer product had a MFI of 3.2 and a density of 0.930 g/cm.sup.3. The amount of carbonyl incorporation was measured using .sup.13C NMR and determined to be 0.19 wt percent (calculated as MEK groups in the polyethylene chain).

DETD Example 1 was repeated, yet for the preparation of polyethylene for cast film applications using the following different steady state conditions:

DETD In this continuous process, polyethylene was obtained in an ethylene conversion rate of 28 percent. The polymer product had a MFI of 2.2, a density of 0.928 g/cm.sup.3 and an Mw/Mn of 5.48. The amount of carbonyl incorporation was measured to be in the same level as in example 1.

DETD Example 1 was repeated, yet for the preparation of polyethylene for extrusion coating applications using the following different steady state conditions:

DETD In this continuous process, polyethylene was obtained in an ethylene conversion rate of 25 percent. The polymer product had a MFI of 4.0 and a density of 0.927 g/cm.sup.3. The amount of carbonyl incorporation was measured to be in the same level as in example 1.

=> d his full

```
     (FILE 'HOME' ENTERED AT 12:52:48 ON 13 MAY 2007)
                SET PLURALS ON PERM
                SET ABBR ON PERM

     FILE 'USPATFULL, CAPLUS, JAPIO, USPAT2' ENTERED AT 12:53:25 ON 13 MAY 2007
                E OHLSSON STEFAN/AU
L1             6 SEA ABB=ON  PLU=ON  "OHLSSON STEFAN"/AU
                D L1 1-6 IBIB ABS
L2            16 SEA ABB=ON  PLU=ON  "OHLSSON STEFAN BERTIL"/AU
                D L2 1-16 IBIB ABS
L3       1002637 SEA ABB=ON  PLU=ON  POLYETHYLENE OR POLYETHENE OR (COPOLYMER?
                OR INTERPOLYMER?) AND ((ETHYLENE OR ETHENE)(6A)(ACRYLATE# OR
                VINYL(1A) ACETATE#))
L4          1827 SEA ABB=ON  PLU=ON  (TELOGEN? OR TELOMER? OR CHAIN (1A)
```

```
                TRANSFER)(S)(PROPYLENE OR PROPENE)
L5          846 SEA ABB=ON  PLU=ON  L3 AND L4
L6           39 SEA ABB=ON  PLU=ON  L5 AND RELAXATION(1A) TIME
L7            7 SEA ABB=ON  PLU=ON  L6 AND CHAIN(2A) BRANCH?
                D L7 1-7 IBIB ABS
                D L7 5 IBIB HIT
L8           30 SEA ABB=ON  PLU=ON  L5 AND SHORT(1A) CHAIN?(1A) BRANCH?
                D L8 1-30 IBIB ABS
                D L8 30 IBIB HIT
                D L8 29 IBIB HIT
                D L8 21 IBIB HIT
                D L8 16 IBIB HIT


     FILE HOME

     FILE USPATFULL
     FILE COVERS 1971 TO PATENT PUBLICATION DATE: 10 May 2007 (20070510/PD)
     FILE LAST UPDATED: 10 May 2007 (20070510/ED)
     HIGHEST GRANTED PATENT NUMBER: US7216369
     HIGHEST APPLICATION PUBLICATION NUMBER: US2007107107
     CA INDEXING IS CURRENT THROUGH 10 May 2007 (20070510/UPCA)
     ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 10 May 2007 (20070510/PD)
     REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2006
     USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2006


     FILE CAPLUS

     Copyright of the articles to which records in this database refer is
     held by the publishers listed in the PUBLISHER (PB) field (available
     for records published or updated in Chemical Abstracts after December
     26, 1996), unless otherwise indicated in the original publications.
     The CA Lexicon is the copyrighted intellectual property of the
     American Chemical Society and is provided to assist you in searching
     databases on STN.  Any dissemination, distribution, copying, or storing
     of this information, without the prior written consent of CAS, is
     strictly prohibited.

     FILE COVERS 1907 - 13 May 2007  VOL 146 ISS 21
     FILE LAST UPDATED: 11 May 2007  (20070511/ED)

     Effective October 17, 2005, revised CAS Information Use Policies apply.
     They are available for your review at:

     http://www.cas.org/infopolicy.html

     FILE JAPIO
     FILE LAST UPDATED: 27 APR 2007       <20070427/UP>
     FILE COVERS APRIL 1973 TO JANUARY 25, 2007

     >>> GRAPHIC IMAGES AVAILABLE <<<

     FILE USPAT2

     FILE COVERS 2001 TO PUBLICATION DATE: 10 May 2007 (20070510/PD)
     FILE LAST UPDATED: 10 May 2007 (20070510/ED)
     HIGHEST GRANTED PATENT NUMBER: US2006024804
     HIGHEST APPLICATION PUBLICATION NUMBER: US2007106485
     CA INDEXING IS CURRENT THROUGH 10 May 2007 (20070510/UPCA)
     ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 10 May 2007 (20070510/PD)
     REVISED CLASS FIELDS (/NCL) LAST RELOADED:  Oct 2006
     USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2006
```